

NASA Advisory Council Space Operations Committee

Report and Discussion February 8, 2007

Committee Members

- Chair: Dr. Paul Robinson
- Col. Eileen Collins
- Maj Gen Pat Condon
- Dr. Thomas Jones
- Dr. David Longnecker
- Rear Adm. Benjamin Montoya

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8 Feb 07

- Tasks from October 2006 meeting
 - Follow-up
 - ISS utilization/science plan...funding beyond 2016
 - Hubble servicing plan
 - COTS
 - ITAR issue
 - “National Laboratory” designation for ISS
 - Orbital debris

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- Committee Fact-finding meeting at JSC, 4 Dec 06
 - ✓ ISS utilization/science plan...funding beyond 2016
 - ✓ Hubble servicing plan
 - ✓ Orbital debris
- Council Meeting, Feb 07
 - ✓ ITAR issue
 - ✓ “National Laboratory” designation for ISS
- Ongoing
 - ☐ COTS execution

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- Budget Briefings/discussion
 - Space Operations Directorate – Bill Gerstenmaier
 - Space Shuttle Program – Bill Hill
 - International Space Station – Mark Uhran
 - Space Communications – Bob Spearing
 - Launch Services and Rocket Propulsion – Bill Wrobel
 - Crew Health and Safety Budget – John Allen
 - NASA Life Sciences/ISS Research – D. Longnecker, Neal Pellis

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- Space Operations Budget
 - Shuttle transition and retirement
 - ISS ops and maintenance past 2010
 - late introduction of new Constellation systems
 - preserving and transitioning highly skilled workforce
 - plan for dispositioning shuttle facilities and equipment
 - ~ \$6B and \$12B
 - ISS crew and cargo transportation services
 - 2007-2011: \$924M budget and upmass shortfall

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- Space Shuttle
 - Missions remaining: 13+1+2
 - established joint transition control board
 - HST in late 2008, rescue launch-on-need capability
- Communications
 - pair of new TDRSS satellites in work
 - 70 m dishes will last til 2015, then phased array
- Launch Services
 - uncertainty in medium class launchers (Delta)
 - COTS a “hopeful” solution

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- Committee Observations

- Shuttle

- 13+1+2:

- We believe the final 2 ISS contingency missions are crucial to realizing ISS research potential, especially in light of an extended gap in US human spaceflight capability. We recommend NASA maintain reserves to execute these flights to protect extensive national investment in ISS.

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- Committee Observations
 - difficult to preserve and motivate workforce with lengthening LEO access gap
 - personnel and budget impacts unpredictable
 - upcoming joint meeting with Human Capital
 - SOMD:
 - 4-year gap “tolerable” to workforce
 - 6-8 years – high opportunity cost in staying
 - “The best go first”

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- Committee Observations

- ISS:

- operations flexibility a casualty of tight budget and logistics margins
 - limited ability to respond to serious system failures or program perturbations

- COTS:

- needs continued close monitoring by NASA
 - future ISS research capability hinges on COTS until Constellation on-line
 - only alternative to extended reliance on partner systems
 - failure of COTS could result in ISS w/o US crew

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- **Committee Observations**

- We find that the shuttle transition, Orion/Ares development, and ISS utilization programs as outlined are highly dependent on flawless performance at every stage, with limited flexibility to deal with unexpected situations. This could lead to growth in the 4-year human spaceflight hiatus and threaten ISS ops and maintenance, workforce and skills maintenance, and NASA's ability to respond to operational crises.

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- Future Work
 - lunar outpost concept of operations
 - transition management lessons from other agencies
 - COTS progress
 - ESMD ground, flight test and operations plan – to be briefed at KSC